

**IN THE CLAIMS:**

This listing of the claims replaces all prior versions and listings of the claims in this application.

The text of all pending claims (including any withdrawn claims) is set forth below. Canceled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strikethrough~~. The status of each claim is indicated with one of (Original), (Currently amended), (Canceled), (Withdrawn), (Previously presented), (New), and (Not entered).

Please AMEND claims 1, 6, and 13 in accordance with the following:

1. (Currently amended) A method of manufacturing a polycrystalline silicon thin film using a laser beam to crystallize an amorphous silicon thin film, the method comprising:
  - forming an amorphous silicon layer on a thin-film transistor region of a substrate; and
  - irradiating a portion of the amorphous silicon layer through a mask using a laser beam to form a first polycrystalline silicon region;
  - moving the mask relative to the substrate so that a light transmission region of the mask exposes a portion of the amorphous silicon layer and overlaps a portion of the first polycrystalline silicon region; and
  - irradiating the exposed portion of the amorphous silicon layer and the overlapped portion of the first polycrystalline silicon region through the mask using a laser beam to form a second polycrystalline silicon region;
  - wherein a width of the overlapped portion of the first polycrystalline silicon region measured perpendicularly to a boundary between the exposed portion of the amorphous silicon layer and the overlapped portion of the first polycrystalline silicon region is always greater than 0.5  $\mu\text{m}$  and always not greater than 2  $\mu\text{m}$ ; and
  - wherein an average width of polycrystalline silicon grains of the second polycrystalline silicon region measured perpendicularly to the width of the overlapped portion of the first polycrystalline silicon region is greater than approximately 0.2  $\mu\text{m}$  and not greater than approximately 0.6  $\mu\text{m}$ , and decreases as the width of the overlapped portion of the first polycrystalline silicon region decreases.

2. (Canceled)

3. (Previously presented) The method of manufacturing a polycrystalline silicon thin film according to claim 1, wherein the irradiating of the amorphous silicon layer, the moving of the mask, and the irradiating of the exposed portion of the amorphous silicon layer and the overlapped portion of the first polycrystalline silicon region are part of a sequential lateral solidification (SLS) crystallization method.

4.-5. (Canceled)

6. (Currently amended) A method of manufacturing a polycrystalline silicon thin film by crystallizing amorphous silicon using a laser beam, the method comprising:

forming an amorphous silicon layer on a thin-film transistor region of a substrate;

irradiating a portion of the amorphous silicon layer through a mask using a laser beam to melt a region of the amorphous silicon layer and cause polycrystalline silicon grains to grow laterally from a boundary between the melted region of the amorphous silicon layer and an unmelted region of the amorphous silicon layer to form a first polycrystalline silicon region, wherein the mask comprises at least a light transmission region for transmitting a laser beam and a light non-transmission region for blocking a laser beam, and the laser-light transmission region is wider than the laser-light non-transmission region by more than 1  $\mu\text{m}$ ;

moving the mask relative to the substrate so that the light transmission region of the mask exposes a portion of the amorphous silicon layer and overlaps a portion of the first polycrystalline silicon region; and

irradiating the exposed portion of the amorphous silicon layer and the overlapped portion of the first polycrystalline silicon region through the mask using a laser beam to form a second polycrystalline silicon region;

wherein a width of the overlapped portion of the first polycrystalline silicon region measured perpendicularly to a boundary between the exposed portion of the amorphous silicon layer and the overlapped portion of the first polycrystalline silicon region is always greater than 0.5  $\mu\text{m}$  and always not greater than 2  $\mu\text{m}$ ; and

wherein an average width of polycrystalline silicon grains of the second polycrystalline silicon region measured perpendicularly to the width of the overlapped portion of the first

polycrystalline silicon region is greater than approximately 0.2  $\mu\text{m}$  and not greater than approximately 0.6  $\mu\text{m}$ , and decreases as the width of the overlapped portion of the first polycrystalline silicon region decreases.

7. (Previously presented) The method of manufacturing a polycrystalline silicon thin film according to claim 6, wherein the mask is a rectangular mask comprising a stripe pattern of light transmission regions and light non-transmission regions.

8.-9. (Canceled)

10. (Previously presented) The method of manufacturing a polycrystalline silicon thin film according to claim 6, wherein the irradiating of the amorphous silicon layer, the moving of the mask, and the irradiating of the exposed portion of the amorphous silicon layer and the overlapped portion of the first polycrystalline silicon region are part of a sequential lateral solidification (SLS) crystallization method.

11.-12. (Canceled)

13. (Currently amended) A method of manufacturing a polycrystalline silicon thin film, the method comprising:

irradiating a portion of an amorphous silicon layer on a thin-film transistor region of a substrate through a mask using a laser beam to form a first polycrystalline silicon region, wherein the mask comprises at least a light transmission region for transmitting a laser beam and a light non-transmission region for blocking a laser beam, and the laser-light transmission region is wider than the laser-light non-transmission region by more than 1  $\mu\text{m}$ ;

moving the mask relative to the substrate so that the light transmission region of the mask exposes a portion of the amorphous silicon layer and overlaps a portion of the first polycrystalline silicon region; and

irradiating the exposed portion of the amorphous silicon layer and the overlapped portion of the first polycrystalline silicon region through the mask using a laser beam to form a second polycrystalline silicon region;

wherein a width of the overlapped portion of the first polycrystalline silicon region measured perpendicularly to a boundary between the exposed portion of the amorphous silicon layer and the overlapped portion of the first polycrystalline silicon region is always greater than 0.5  $\mu\text{m}$  and always not greater than 2  $\mu\text{m}$ ; and

wherein an average width of polycrystalline silicon grains of the second polycrystalline silicon region measured perpendicularly to the width of the overlapped portion of the first polycrystalline silicon region is greater than approximately 0.2  $\mu\text{m}$  and not greater than approximately 0.6  $\mu\text{m}$ , and decreases as the width of the overlapped portion of the first polycrystalline silicon region decreases.

14.-15. (Cancelled)